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December 15, 2003

Attn: Section 8(e) Coordinator

This letter is being submitted pursuant to TSCA 8(e) report information regarding mixtures of bromine and various azole chemistries. Studies were conducted to examine the potential for similar reactions and toxic responses within these chemical classes.

Bromination of azole chemistries to form new molecules has been shown to occur with the following bromine sources

- Bromo-chloro dimethyl hydantoin. (CAS # 16079-88-2)
- Bromine Chloride: A stabilized liquid with BrCl and bromine. (No CAS# Available)
- Sodium Bromide: (CAS # 7647-15-6)

The azole chemistries that have been tested and shown to react with the bromine sources to form a new brominated azole chemistry include:

- tolytriazole (CAS # 29385-43-1)
- chlorotolyltriazole (CAS# 202420-04-0)
- benzotriazole: (CAS # 95-14-7)

The rate of formation of the mixed brominated azole isomers is dependant on contact time, temperature, and ratio of halogen to azole. The reaction was noted to occur in both laboratory and field generated samples. Based on the results of toxicity testing with synthetic cooling water, the 96 hour EC50 to Rainbow Trout of the mixed azoles and brominated azole species is found to be in the range of 0.1 to 1.5 ppm. A definitive LC50 could not be determined due to non-normal mortality responses.


In GEBetz's March 13, 2003 letter, it was stated that HRA (Chlorotriazole CAS# 202420-04-0) was not expected to react with bromine. This statement was based on information obtained from a customer study. Our current research, as stated above, has found information to the contrary.

Please do not hesitate to contact me if you would like further information.

Sincerely,

Laura J. Briggs

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